



New York Energy and Climate Advocates

310 W. 86th St. #6B, New York, NY 10024

January 19, 2023

NYS Senate Standing Committee on Finance
NYS Senate Standing Committee on Energy & Telecommunications
NYS Senate Standing Committee on Environmental Conservation
financechair@nysenate.gov

Re: Testimony on actions necessary to implement the CLCPA

Dear Honorable legislators,

New York Energy & Climate Advocates is a non-profit, volunteer-based organization comprised of scientists, engineers, environmentalists, and advocates for social justice who understand the reality of climate change and the moral imperative for timely action, employing effective solutions that work in the real world. Please accept our testimony regarding legislative action to advance purposes of the Climate Leadership and Community Protection Act (CLCPA) following adoption of the Climate Action Council's Scoping Plan.

After two years of deliberation, the scoping document prepared by the Climate Action Council is remarkable, both in what it achieves and in what it overlooks.

The plan found that deep decarbonization will require significant changes in how we produce and consume energy. Meticulous analysis by the New York State Energy Research and Development Authority (NYSERDA) identified action needed to reduce greenhouse gas emissions within various sector of the economy, including the electrification of heating systems, vehicles, and industry. The plan also predicted that widespread electrification will cause statewide demand for electricity to double. Responding to technical comments on the draft, the final plan wisely broadened the scope of potential resources to include emerging carbon-free technologies such as advanced nuclear power. It also recognized that economic prosperity will not be possible unless the clean energy transition sustains unionized labor and the vitality of New York's high-wage, skilled workforce. These are all positive attributes of the plan.

Having said this, the document falls short of charting a credible course for the future. Notably, the final Scoping Plan did not receive unanimous support of the Council. Also telling is that dissenting votes came from members with significant expertise in energy and the operation of New York's electric grid. Representing three quarters of generation in the state, Independent Power Producers of New York (IPPNY) observed that the final plan lays out a pathway for potentially achieving the CLCPA's interim goal of 70% electricity from renewables, but that it neglects to address the Act's most relevant electricity goal with respect to climate change: a carbon-free grid by 2040 that is reliable and affordable.¹ This should be of great concern to policy-makers. Moreover, the consequences of failing to decarbonize the grid should not

¹ Independent Power Producers of New York, *Impractical Climate Plan Should Have New Yorkers Concerned*, Dec 19, 2022. [impractical-climate-plan-should-have-new-yorkers-concerned-943.html](https://www.ippny.org/impractical-climate-plan-should-have-new-yorkers-concerned-943.html)

be underestimated. Prior to the closure of Indian Point, less than half of New York’s electricity came from fossil fuels.² Therefore, **as electricity demand grows—even assuming that New York achieve its 70% renewable goal—if the balance of generation comes from fossil fuels, the state could be burning more gas for electricity in 2050 than when the CLCPA was enacted.**

Consistent with NYSEERDA’s analysis, this underscores the obvious importance of retaining and relicensing New York’s remaining nuclear assets. Beyond this, it underscores the need to seriously address how full decarbonization of the electric grid will be achieved. As discussed in our comments on the draft plan, the challenges of intermittency are not linear. In the early stages of decarbonization when solar and wind make up a small portion of total generation (the stage we are in now), integrating intermittent resources into the grid is relatively easy since dispatchable fossil fuels are still available to produce electricity when those intermittent sources cannot. However, as more intermittent generation is introduced, system-level costs and complexity grow exponentially. This not only results in the need for overbuilt solar and wind capacity, large amounts of storage, and the significant expansion of transmission infrastructure; it also necessitates dispatchable “firm” backup capacity to ensure reliability when intermittent generation and storage is inadequate.³ In fact, the New York Independent System Operator (NYISO) warns that in a system dominated by wind and solar, **New York would require at least 27 gigawatts of dispatchable emission-free resources (DEFRs), roughly equal to the entire capacity of gas-fired power plants in the state today.**⁴ The Scoping Plan alludes to electrolyzers, hydrogen fuel cells, underground storage of hydrogen gas, and 400 miles of new hydrogen-grade pipeline to support this. However, it avoids any meaningful discussion of how such a massive physical deployment of redundant infrastructure will come to fruition.

Equally concerning is the assumption that firm capacity would rarely be needed. In the real world, bounded by the physical constraints of an actual grid, the challenges of intermittency and need for dispatchable generation materialize far sooner than academic studies suggest. **It is important that policy-makers and the public understand that unless substantial firm carbon-free capacity is built that can generate electricity when intermittent sources are unavailable and batteries are depleted, almost all of today’s existing fossil fuel power plants and related infrastructure—whether they are used a lot of a little—will need to remain in place and operational.**

California and Germany provide stark examples of where a strategy that places all or nearly all eggs into the basket of intermittent generation will lead. California has spent billions of dollars on wind and solar while shrinking the capacity of nuclear power. Yet although non-hydro renewables still constitute only about a third of generation, the state now suffers from skyrocketing electric rates, grid instability, and ongoing dependence on fossil fuels. In fact, California relies on about as much dispatchable gas-fired electricity generation today as it did two decades ago. Likewise, the world has seen how Germany’s once celebrated all-renewable plan *Energiewende* has brought the European economy to its knees, resulting in demand for Russian gas that is now being replaced by imported fossil fuels and a resurgence of coal. Today, the carbon intensity of Germany’s grid remains four to five times higher than neighboring France, which successfully

² In 2019, prior to the closure of Indian Point, 39% of annual electricity generation in the state came from fossil fuels (Power Trends 2020). Following the closure of Indian Point, that has increased to about half of annual generation.

³ New York Energy & Climate Advocates, *Comments on Draft Scoping Plan*, July 1, 2022. See Section II.

[NYECA-Scoping-Plan-comments 7-1-22r-Schue Rodberg.pdf](#)

⁴NYISO, “2021-2040 System & Resource Outlook” Sept 22, 2022. [NYISO 2021-2040-Outlook-Report.pdf](#)

decarbonized its grid with nuclear decades ago. Late in the game, both California and Germany have seen the wisdom of holding onto their last few reactors, but not until after the damage of misguided ideology-driven policy already happened. If New York is wise, it will learn from their mistakes, not repeat them.⁵

A valuable aspect of nuclear power is its extremely high capacity factor, typically in excess of 90%. This makes it useful not simply as “backup” for intermittent generation, but as a significant contributor to total energy production, thereby maintaining reliability while reducing the amount of underperforming renewables needed. Indeed, the existence of baseload nuclear and hydropower is the overwhelming reason why the electric grid of upstate New York is already more than 90% carbon free. In fact, baseload nuclear and/or hydro is how *every major nation in the world with a low-carbon grid* has decarbonized. Due to its very high capacity factor, extremely small physical footprint, low material requirements, and long lifetime, nuclear also conserves farmland, habitat, and natural resources.⁶

To be clear, the final scoping plan adopted by the Climate Action Council is to be commended for including advanced nuclear as a potential resource. However, despite nuclear power’s track record of producing reliable baseload electricity for decades within New York and throughout the world, no substantive analysis has occurred to evaluate how this proven role could be expanded within the state as part of a more balanced electric portfolio. Ample system-level research confirms that decarbonization strategies which rely predominantly on intermittent generation are the least feasible and most costly compared to those with a balance of carbon-free resources.⁷ Nonetheless, all scenarios analyzed within the Scoping Plan prescribe intermittent solar and wind for nearly 80% of total generation—a feat that has never been attained by any state in the country or nation on Earth.

We believe that ambitious goals of the CLCPA are within reach. However, achieving them will require action that looks beyond the Scoping Plan that has been put forth. We recommend that the legislature call upon NYSERDA, the Department of Public Service, and the New York Power Authority (NYPA), in cooperation with NYISO, to perform a comprehensive technical evaluation of action needed to fully decarbonize the state’s electricity grid. Instead of focusing on efforts already underway to meet the state’s 2030 goal, the purpose of such analysis should be to carefully examine the system-level needs of transmission, storage, firm generation, and regional interconnectivity critical to attaining the much more difficult—and more important—task of carbon-free electricity by 2040 and beyond as the electrification of other sectors cause statewide demand for electricity to climb. This analysis should also carefully examine the optimal combination of baseload, dispatchable, and intermittent generation to ensure reliability and minimize cost to ratepayers, taking into account system-level impacts. With an eye on the salient goal of decarbonization, rather than a myopic allegiance to “renewables”, state agencies should be empowered to consider all viable forms of carbon-free generation, infrastructure, and processes including but not limited to advanced nuclear, thermal storage, hydrogen, and zero-net-carbon synthetic fuels. Consistent with New York’s spirit of innovation, agencies should also be encouraged to explore first-of-a-kind projects in partnership with the

⁵ Ibid, New York Energy & Climate Advocates, *Comments on Draft Scoping Plan*, July 1, 2022. See Section IV. [NYECA-Scoping-Plan-comments 7-1-22r-Schue Rodberg.pdf](#)

⁶ Ibid, Section V

⁷ Ibid, Section II

federal government and private sector, taking advantage of programs and opportunities such as the Inflation Reduction Act.

Likewise, it is important not to hinder progress with poorly conceived legislation that interferes with the development of carbon-free technology. An unfortunate example of this is the Build Public Renewable Act. Although portrayed as simply allowing NYPA to build renewables, the bill actually prohibits NYPA from operating, developing, or assisting in the development of any generation not narrowly defined as “renewable.” It also mandates that all state and municipal governments receive their electricity from exclusively renewable sources. (For example, Oswego town hall would be forbidden from using carbon-free electricity from the locally-operated nuclear power plant ten miles away.) As previously discussed, deploying enough solar and wind projects to meet the state’s 70% renewable goal is not the greatest challenge to success of the CLCPA. The greatest challenge is securing firm generation, transmission, and related system-level infrastructure that can work in tandem with renewables to complete the job of decarbonizing the state’s grid while ensuring reliable and affordable electricity. These are also the components of a future decarbonized electric grid that will be most difficult for the private sector to develop on its own. The CLCPA does not have a 100% renewable mandate, therefore NYPA and municipalities should not either. As we testified last year, by restricting NYPA to renewable-only projects, the bill prevents the Authority from doing that which would be most useful to achieve CLCPA goals, thereby *increasing* the likelihood that New York will need to continue burning fossil fuels long into the future.⁸

Finally, with respect to energy planning, we wish to emphasize the importance of bringing competent, technical experts to the table regarding the beneficial development of innovative technologies that will be necessary for the CLCPA to succeed. If New York is serious about achieving its climate and energy goals, it cannot be distracted by ideological agendas that hinder rather than assist the difficult task ahead.

We agree with NYSERDA President Doreen Harris, who stated in her closing remarks to the Climate Action Council that the scoping document which has been prepared is the beginning, not the end, of work necessary for the CLCPA to succeed. We also appreciate that such work will require ongoing collaboration of the legislature, state and federal agencies, technical experts, and the private sector. Our organizations welcomes the opportunity to contribute to that effort. Please feel free to contact us if we can be of assistance.

Sincerely,



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⁸ New York Energy & Climate Advocates, *Role of State Authorities in Renewable Energy Development*; July 26, 2022. [BPRA-testimony_NYECA_7-26-22.pdf](#)